
लॉरिक एसिड — विशिष्टि

(पहला पुनरीक्षण)

Lauric Acid — Specification

(First Revision)

ICS 67.200.10

© BIS 2023



भारतीय मानक ब्यूरो
BUREAU OF INDIAN STANDARDS
मानक भवन, 9 बहादुर शाह ज़फर मार्ग, नई दिल्ली - 110002
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI - 110002
www.bis.gov.in www.standardsbis.in

FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Oils and Oilseeds Sectional Committee had been approved by the Food and Agriculture Division Council.

Lauric acid is a saturated fatty acid having 12 carbon atoms. Its molecular formula is $\text{CH}_3(\text{CH}_2)_{10}\text{COOH}$ with 200.3 as its molecular weight. It is a crystalline solid with a faint characteristic fatty odour. It is a major fatty acid of coconut oil (*Cocos nucifera* Linn.), palm kernel oil (*Elaeis guineensis* Jacq.) and babassu oil (*Orbignya martiana*, *O. oleifera* or *O. speciosa*). Pisa fat (*Actinodaphne angustifolia* Nees or *Actinodaphne hookeri* Meissn) contains over 90 percent lauric acid. Commercially, lauric acid is obtained from lauric acid rich oils by fractional distillation of their fatty acids. By repeated fractionation steps, lauric acid of 99 percent purity can be made.

Lauric acid is a raw material for the manufacture of oleochemicals, surfactants, non-yellowing alkyd resins and lubricants. This standard was originally published in 1984. This first revision has been brought out to incorporate the following major changes:

- a) Requirements of Grade 2 and Grade 3 have been merged into one grade;
- b) Requirements of moisture, saponification value, unsaponifiable matter, titre and colour have been updated;
- c) Requirement of mineral acidity and ash content have been deleted; and
- d) Fatty acid composition has been incorporated.

The composition of the committee responsible for the formulation of this standard is listed in Annex A.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 2022 'Rules for rounding off numerical values (*second revision*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard
LAURIC ACID — SPECIFICATION
(First Revision)

1 SCOPE

This standard prescribes the requirements and the methods of sampling and test for Lauric acid.

2 REFERENCES

The standards listed below contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards listed below:

<i>IS No.</i>	<i>Title</i>
IS 548	Methods of sampling and test for oils and fats:
(Part 1/Sec 2) : 2021	Sampling, physical and chemical tests, Section 2 Physical and chemical tests
(Part 3/Sec 1) : 2021	Advanced instrumental methods, Section 1 Determination of fatty acid profile

3 GRADES

The material shall be of two grades, namely:

- a) Grade 1; and
- b) Grade 2.

4 REQUIREMENTS**4.1 Description**

Lauric acid shall be the product obtained by splitting Lauric acid rich oils like coconut oil, palm kernel oil, etc, and fractionating the fatty acids suitably. It shall be clear when melted and free from sediments, suspended and other foreign matter.

4.2 The material shall also comply with the requirement given in Table 1.

4.3 Grade 1 and Grade 2 Lauric acid shall comply with the fatty acid composition specified in Table 2 and Table 3, respectively, when tested as per the method prescribed in IS 548 (Part 3/Sec 1) or any other validated international method.

5 PACKING AND MARKING**5.1 Packing**

The material shall be supplied in suitable containers, as agreed to between the purchaser and the supplier. The packaging material shall not affect the quality of the product/material being packed.

5.2 Marking

5.2.1 The containers shall be securely closed and legibly and indelibly marked with the following information:

- a) Name and address of manufacturers and recognized trade-mark, if any;
- b) Name and grade of the material;
- c) Net quantity of the material;
- d) Batch number or lot number in code or otherwise;
- e) Month and year of manufacture;
- f) Expiry date (Month and Year); and
- g) Any other information required under the *Legal Metrology (Packaged Commodities) Rules, 2011*.

5.2.2 BIS Certification Marking

The product(s) conforming to the requirements of this standard may be certified as per the conformity assessment schemes under the provisions of the *Bureau of Indian Standards Act, 2016* and the Rules and Regulations framed thereunder, and the products may be marked with the Standard Mark.

Table 1 Requirements for Lauric Acid
(Clause 4.2)

Sl No.	Characteristic	Requirements		Method of Test, Ref to
		Grade 1	Grade 2	
(1)	(2)	(3)	(4)	(5)
i)	Moisture, percent by mass, <i>Max</i>	0.2	0.4	6 of IS 548 (Part 1/Sec 2)
ii)	Saponification value	279 - 283	269 - 285	16 of IS 548 (Part 1/Sec 2)
iii)	Acid value shall not differ from Saponification value by more than	4	4	8 of IS 548 (Part 1/Sec 2)
iv)	Iodine value, <i>Max</i>	0.3	0.5	15 of IS 548 (Part 1/Sec 2)
v)	Unsaponifiable matter, percent by mass, <i>Max</i>	0.2	0.3	9 of IS 548 (Part 1/Sec 2)
vi)	Titre, °C	43 - 45	32 - 45	13 of IS 548 (Part 1/Sec 2)
vii)	Colour, 5 _{1/4} inch cell, <i>Y + 5R</i> , <i>Max</i>	2.5	5	14.1 of IS 548 (Part 1/Sec 2)

Table 2 Fatty Acid Composition of Lauric Acid (Grade 1)
(Clause 4.3)

Sl No.	Fatty acid	Percentage
(1)	(2)	(3)
i)	C8:0 + C10 : 0	1.0 (<i>Max</i>)
ii)	C12 : 0	99.0 (<i>Min</i>)
iii)	C14 : 0 + C16 : 0	1.0 (<i>Max</i>)

Table 3 Fatty Acid Composition of Lauric Acid (Grade 2)
(Clause 4.3)

Sl No.	Fatty acid	Percentage
(1)	(2)	(3)
i)	C8 : 0 + C10 : 0	1.0 (<i>Max</i>)
ii)	C12 : 0	≥ 70 and < 99
iii)	C14 : 0	1 - 30
iv)	C16 : 0	4 (<i>Max</i>)
v)	Others	1 (<i>Max</i>)

ANNEX A
(Foreword)

COMMITTEE COMPOSITION

Oils and Oilseeds Sectional Committee, FAD 13

<i>Organization</i>	<i>Representative(s)</i>
ICAR-Central Institute of Post Harvest Engineering & Technology (CIPHET), Ludhiana	DR DEEP NARAYAN YADAV (Chairperson)
All India Food Processors Association, New Delhi	DR PRAVIN KUMAR SINGH SHRI KAJAL DEBNATH (<i>Alternate</i>)
CSIR-Central Food Technological Research Institute, Mysore	DR AJAY W. TUMANAY DR USHARANI DANDAMUDI (<i>Alternate</i>)
CSIR-Indian Institute of Chemical Technology, Hyderabad	DR PRADOSH P. CHAKRABARTI DR SANJIT KANJILAL (<i>Alternate</i>)
Cargill India Private Limited, Gurugram	SHRI NEERAJ SINGH DR NIDHI BHATIWADA (<i>Alternate</i>)
Central Organization for Oil Industry and Trade, New Delhi	SHRI DOODA SATYA PRASAD SHRI SURESH NAGPAL (<i>Alternate</i>)
Consumer Guidance Society of India, Mumbai	DR SITARAM DIXIT DR M. S. KAMATH (<i>Alternate</i>)
Defence Food Research Laboratory, Mysore	SHRI DEV KUMAR YADAV SHRI M. D. AYUB KHAN (<i>Alternate</i>)
Directorate of Marketing and Inspection, Faridabad	DR D. M. GOVINDA REDDY SHRI RAHUL SAINI (<i>Alternate</i>)
Directorate of Rapeseed and Mustard Research, Bharatpur, Rajasthan	DR ANUBHUTI SHARMA DR ARUN SHARMA (<i>Alternate</i>)
FARE Labs Private Limited, Gurgaon	SHRI D.K. MATHUR DR MEENAKSHI SHARMA (<i>Alternate</i>)
Food Safety and Standards Authority of India, New Delhi	MS AIMAN ZAIDI
Harcourt Butler Technical University, Kanpur	DR P.K.S. YADAV
ICAR-Indian Institute of Oilseeds Research, Hyderabad	DR M. SUJATHA DR PRADUMAN YADAV (<i>Alternate</i>)
ICMR-National Institute of Nutrition, Hyderabad	DR S. AHAMED IBRAHIM
Indian Vegetable Oil Producers' Association, New Delhi	SHRI S. P. KAMRAH DR HIMANISH DAS (<i>Alternate</i>)

<i>Organization</i>	<i>Representative(s)</i>
Institute of Chemical Technology, Mumbai	PROF AMIT P. PRATAP PROF R. D. KULKARNI (<i>Alternate</i>)
Marico Limited, Mumbai	MS MEENU YADAV KUMARI RESHMA POOTHATTA (<i>Alternate</i>)
Mustard Research and Promotion Council, New Delhi	DR PRAGYA GUPTA
National Institute of Food Technology Entrepreneurship and Management, Sonipat	DR SUNIL PAREEK
Oil Technologists' Association of India, Kanpur	DR C. S. JOSHI DR R. P. SINGH (<i>Alternate</i>)
The Solvent Extractors' Association of India, Mumbai	DR PRABODH HALDE SHRI AKSHAY MODI
Voluntary Organisation in Interest of Consumer Education (VOICE), New Delhi	SHRI M. A. U. KHAN MR K. C. CHAUDHARY
In Personal Capacity (127/6, South Bakkalam, P.O. Kanul, Kalliasseri, Kannur – 670562)	DR A. MADHAVAN
In Personal Capacity (310, Kohat Enclave, Pitampura, Delhi – 110034)	DR Y. C. NIJHAWAN
In Personal Capacity (3A/148, Azad Nagar, Kanpur – 208002)	PROF R. K. TRIVEDI
BIS Directorate General	SHRIMATI SUNEETI TOTEJA, SCIENTIST 'E'/DIRECTOR AND HEAD (FOOD AND AGRICULTURE) [REPRESENTING DIRECTOR GENERAL (<i>Ex-officio</i>)]

Member Secretary
DR BHAWANA
SCIENTIST 'D'/JOINT DIRECTOR
(FOOD AND AGRICULTURE), BIS

Panel for Revision of Indian Standards on Fatty Acids, FAD 13/Panel V

<i>Organization</i>	<i>Representative(s)</i>
Institute of Chemical Technology, Mumbai	PROF R.D. KULKARNI (Convenor)
CSIR-Indian Institute of Chemical Technology, Hyderabad	DR PRADOSH P. CHAKRABARTI
Himalaya Wellness Company, Bengaluru	DR SUNDARAM RAMACHANDRAN
ITC Life Sciences and Technology Centre, Bengaluru	SHRI AVISEK MUKHOPADHYAY
Indian Beauty and Hygiene Association, Mumbai	DR DOSS JAYAPRAKASH
Institute of Chemical Technology, Mumbai	PROF AMIT P. PRATAP
In Personal Capacity (B/501, Chinari CHS, Kothrud, Pune – 411038)	SHRI VILAS KAKADE
In Personal Capacity (3A/148, Azad Nagar, Kanpur – 208002)	PROF R. K. TRIVEDI
Unitop Chemicals, Mumbai	SHRI A. T. MIRAJKAR

Bureau of Indian Standards

BIS is a statutory institution established under the *Bureau of Indian Standards Act, 2016* to promote harmonious development of the activities of standardization, marking and quality certification of goods and attending to connected matters in the country.

Copyright

BIS has the copyright of all its publications. No part of these publications may be reproduced in any form without the prior permission in writing of BIS. This does not preclude the free use, in the course of implementing the standard, of necessary details, such as symbols and sizes, type or grade designations. Enquiries relating to copyright be addressed to the Head (Publication & Sales), BIS.

Review of Indian Standards

Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the website- www.bis.gov.in or www.standardsbis.

This Indian Standard has been developed from Doc No.: FAD 13 (21759).

Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

BUREAU OF INDIAN STANDARDS

Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110002
Telephones: 2323 0131, 2323 3375, 2323 9402

Website: www.bis.gov.in

Regional Offices:

	Telephones
Central : 601/A, Konnectus Tower -1, 6 th Floor, DMRC Building, Bhavbhuti Marg, New Delhi 110002	{ 2323 7617
Eastern : 8 th Floor, Plot No 7/7 & 7/8, CP Block, Sector V, Salt Lake, Kolkata, West Bengal 700091	{ 2367 0012 2320 9474
Northern : Plot No. 4-A, Sector 27-B, Madhya Marg, Chandigarh 160019	{ 265 9930
Southern : C.I.T. Campus, IV Cross Road, Taramani, Chennai 600113	{ 2254 1442 2254 1216
Western : Plot No. E-9, Road No.-8, MIDC, Andheri (East), Mumbai 400093	{ 2821 8093

Branches : AHMEDABAD. BENGALURU. BHOPAL. BHUBANESHWAR. CHANDIGARH. CHENNAI. COIMBATORE. DEHRADUN. DELHI. FARIDABAD. GHAZIABAD. GUWAHATI. HIMACHAL PRADESH. HUBLI. HYDERABAD. JAIPUR. JAMMU & KASHMIR. JAMSHEDPUR. KOCHI. KOLKATA. LUCKNOW. MADURAI. MUMBAI. NAGPUR. NOIDA. PANIPAT. PATNA. PUNE. RAIPUR. RAJKOT. SURAT. VISAKHAPATNAM.